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EXAMINER

ENGLAND, DAVID E

| | |
|----------|--------------|
| ART UNIT | PAPER NUMBER |
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2143

DATE MAILED: 08/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/881,302

Applicant(s)

CONNOR, PATRICK L.

Examiner

David E. England

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 March 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 - 3, 5 - 12 and 14 - 17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 - 3, 5 - 12 and 14 - 17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 June 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

DETAILED ACTION

1. Claims 1 – 3, 5 – 12 and 14 – 17 are presented for examination.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the “packet array has a length of 1-N” must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled “Replacement Sheet” in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 5, 9 and 14 rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

5. The limitation of “1-N” is not specifically described in a way for one to properly interpret what N stands for in the specification.

6. Claims 1 – 3, 5 – 12 and 14 – 17 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

7. In claims 1 and 10, the limitation of, “indicating said packet array to a protocol stack if said resource state comprises a low resource state to reduce copying of packets between buffers” is not stated in a manner that would be conclusive to the act of

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indicating said packet array would “reduce copying of packets between buffers”.

Applicant is asked to point out in the specification where this limitation can be interpreted into the claims and the drawings.

8. All other claims are rejected for their dependency on claims 1 and 10 above.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 1, 2, 6 – 8, 10, 11 and 15 – 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hausman et al. U.S. Patent No. 5872920 (hereinafter Hausman) in view of Fichou et al. (6765873) (hereinafter Fichou) in further view of Wilson et al. (6651117) (hereinafter Wilson).

11. Referencing claim 1, as closely interpreted by the Examiner, Hausman teaches a computer-implemented method to manage a packet array, comprising:

12. receiving a packet by a device driver, (e.g. col. 1, lines 39 – 58);

13. adding said packet to a packet array, (e.g. col. 5, lines 44 – 58); and

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14. indicating said packet array to a protocol stack if said resource state comprises a low resource state, (e.g. col. 6, lines 18 – 46, “...*software protocol (driver)*...”), but does not specifically teach determining a resource state for said device driver;
15. setting a resource state indicator for said packet based on said resource state; and
16. reducing copying of packets between buffers.
17. Fichou teaches determining a resource state for said device driver, (e.g., col. 5, lines 31 – 55);
18. setting a resource state indicator for said packet based on said resource state, (e.g., col. 8, line 63 – col. 9, line 44);
19. adding said packet to a packet array, (e.g., col. 8, line 63 – col. 9, line 44). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Fichou with Hausman because it would be more efficient for a system to monitor the resource that are distributed amongst the system to transmit packet information using a threshold so once the packet load reaches the threshold the system can take the necessary steps to alleviate the packet load therefore causing less backup in the system.
20. Wilson teaches reducing copying of packets between buffers, (e.g., col. 3, lines 2 – 32). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Wilson with the combine system of Hausman and Fichou because reducing the times a system copies packets between buffers will lead to a system that has more memory which could be used for more communication actions.
21. Referencing claim 2, as closely interpreted by the Examiner, Hausman teaches

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22. comparing said resource state to a predetermined threshold, (e.g. col. 6, lines 18 – 46); and

23. setting a resource state indicator in accordance with said comparison, (e.g. col. 5, lines 44 – 59).

24. Referencing claim 6, as closely interpreted by the Examiner, Hausman teaches said packet array is stored in a first buffer, (e.g. col. 7, lines 1 – 13).

25. Referencing claim 7, as closely interpreted by the Examiner, Hausman teaches said resource state indicator is an explicit resource state indicator, (e.g. col. 5, lines 44 – 58).

26. Referencing claim 8, as closely interpreted by the Examiner, Hausman teaches receiving said packet array, (e.g. col. 6, lines 54 – 67);

27. determining an implicit resource state for each packet in said packet array, (e.g. col. 6, lines 54 – 67); and

28. copying each packet having an implicit resource state below a predetermined threshold from said first buffer to a second buffer, (e.g. col. 6, lines 54 – 67).

29. Claims 10, 11 and 15 – 17 are rejected for similar reasons stated above.

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30. Claims 3, 5, 9, 12 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hausman, Fichou and Wilson as applied to claims 1, 2, 10 and 11 above, and in view of Shinohara (5901139).

31. As per claim 3, as closely interpreted by the Examiner, Hausman, Fichou and Wilson do not specifically teach said setting said resource state indicator in accordance with said comparison comprises:

32. setting said resource state indicator to normal if said resource state is above or equal to said predetermined threshold; and

33. setting said resource state indicator to low if said resource state is below said predetermined threshold.

34. Shinohara teaches said setting said resource state indicator in accordance with said comparison comprises:

35. setting said resource state indicator to normal if said resource state is above or equal to said predetermined threshold, (e.g. col. 7, lines 4 – 27); and

36. setting said resource state indicator to low if said resource state is below said predetermined threshold, (e.g. col. 7, lines 4 – 27). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Shinohara with Hausman because setting up indications in response to threshold requirements aids in determining of specific buffers or network devices can handle the amount of data traversing the network.

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37. As per claim 5, as closely interpreted by the Examiner, Hausman and Shinohara do not specifically teach said packet array has a length of 1-N.

38. Fichou teaches said packet array has a length of 1-N, (e.g. col. 10, lines 34 – 46). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Fichou with the combine system of Hausman and Shinohara because it is well known in the computer art that system that utilize a binary or hexadecimal architecture that how ever many bit are in a packet, they are number or “kept track” by starting with the number 0 as opposed to 1.

39. As per claim 9, as closely interpreted by the Examiner, Hausman teaches

40. retrieving each packet in order from said packet array, (e.g. col. 6, lines 54 – 67);

41. determining that said implicit resource state is normal for each packet if said explicit resource state indicator is normal, (e.g. col. 6, lines 54 – 67); and

42. determining that said implicit resource state is low for any remaining packets in said packet array if said explicit resource state indicator is low, (e.g. col. 6, lines 54 – 67), but does not specifically teach said packets are ordered from 1-N in said packet array, and determining said implicit resource state.

43. Fichou teaches said packets are ordered from 1-N in said packet array, and determining said implicit resource state, (e.g. col. 10, lines 34 – 46). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Fichou with the combine system of Hausman and Shinohara because of similar reasons stated above.

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44. Claims 12 and 14 are rejected for similar reasons as stated above.

Response to Arguments

45. Applicant's arguments filed 03/10/2005 in view of a 112 first paragraph has been fully considered but they are not persuasive.

46. In the remarks, the Applicant argues in substance that the specification, page 15, line 22 – page 16 line 10, does support the language “1-N” in the claimed subject matter, which refers to a length for a packet array, where “N” represents a number of packets in the packet array.

47. As to part 1, Examiner has read the sections of the specification and there still is no section that could make one of ordinary skill in the art understand that “1-N” refers to a length for a packet array. Even if one can gather from the specification that “N” is a number of packets in the packet array, how could “1-N” be the length of a packet array since the length of the packet array would be at least 0 if there is one packet in the array, (example, if one packet arrives and is put in the packet array that would mean that $N=1$ and the equation would be “1-1” which equates to 0.). Furthermore, if there were more than one packet the length of the packet array would be negative (-). The Examiner would like the Applicant to explain how a length of a packet array can be negative with support in the specification and drawings, (example, if 5 packets arrive and are placed in the packet array, that would mean that the length of the packet array would be -4, “1-5= -4”).

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48. Applicant's arguments with respect to claims 1 – 3, 5 – 12 and 14 – 17 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

49. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

50. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

51. a. Edholm U.S. Patent No. 6600721 discloses End node pacing for QOS and bandwidth management.

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- 52. b. Surazski et al. U.S. Patent No. 6657983 discloses Scheduling of upstream traffic in a TDMA wireless communications system.
- 53. c. Gerardin et al. U.S. Patent No. 6222822 discloses Method for optimizing a digital transmission network operation through transient error monitoring and control and system for implementing said method.
- 54. d. Joy et al. U.S. Patent No. 6725311 discloses Method and apparatus for providing a connection-oriented network over a serial bus.
- 55. e. Kalkunte U.S. Patent No. 6009104 discloses Apparatus and method for selectively modulating interpacket gap interval following a collision to avoid capture effect.
- 56. f. Ma et al. U.S. Patent No. 6006323 discloses Intelligent multiple stack management unit.
- 57. g. Hyder et al. U.S. Patent No. 6633929 discloses Method and system for abstracting network device drivers.
- 58. h. Hyder et al. U.S. Patent No. 6499065 discloses System and method for batching data between link and transport layers in a protocol stack.
- 59. i. Conner U.S. Patent No. 6735622 discloses Method and apparatus for improving bus efficiency given an array of frames to transmit.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David E. England whose telephone number is 571-272-3912. The examiner can normally be reached on Mon-Thur, 7:00-5:00.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David A. Wiley can be reached on 571-272-3923. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

David E. England
Examiner
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De



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